ISSUE No. 2 JUNE 1953

AIR-COOLED NEWS

PUBLICATION OF

THE H.H. FRANKLIN CLUB

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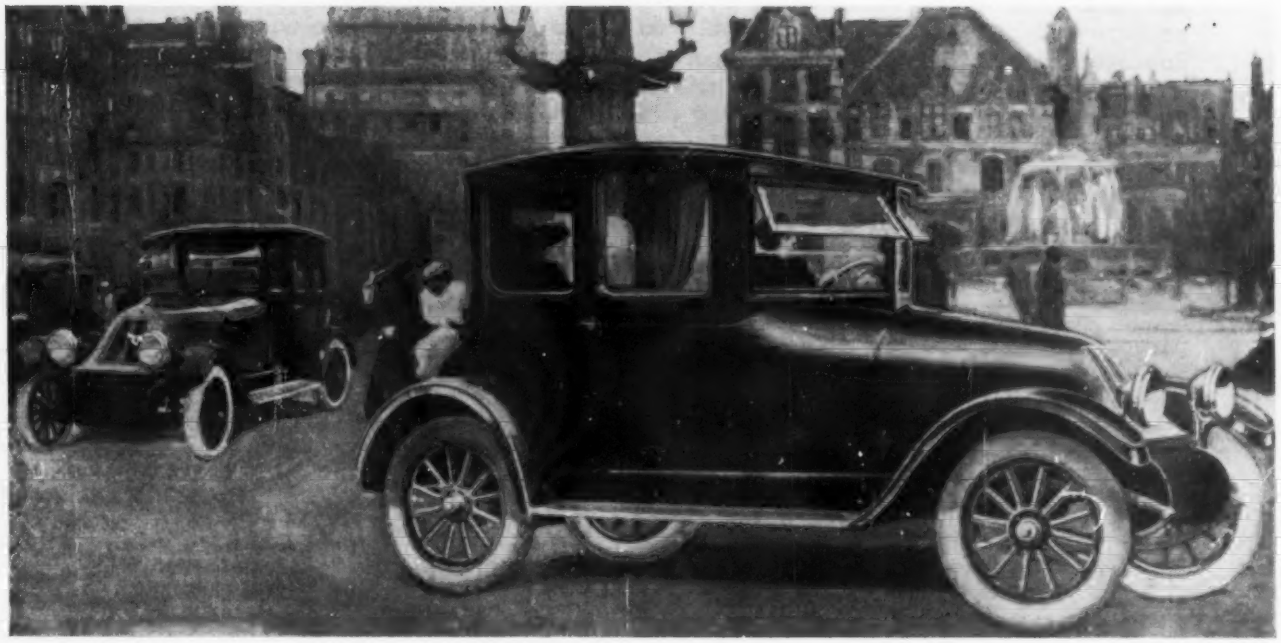

Series Nine

(See Article on Page 5)

Issue No. 2 June 1953

AIR-COOLED NEWS

Publication of

THE H. H. FRANKLIN CLUB
Headquarters: 1405 East Kleindale Road, Tucson, Arizona

R. V. Keys, President, Whittier, California
T. H. Hubbard, Editor, Tucson, Arizona
C. W. Boram, Treasurer, Maywood, Illinois

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CLUB FINANCES: The response to the voluntary dues plan announced in the 1st issue has been good. However, there is not on hand enough money to plan a 3rd issue, which suggests a more conventional method of raising funds is in order. We should have a hard-core membership of at least 150, so that with dues of $2.50, we would have $375. a year to work with or enough to turn out three or four good issues a year. This is strictly non-profit with all time and work involved being donated, and any balance in funds will be used to add more pictures to future issues. If you think "Air-Cooled News" is worthwhile and want it to continue, send $2.50 to Clifford Boram, 104 Oak Street, Maywood, Illinois. Please make checks out to "Clifford Boram, Treasurer, H.H.F.C.".

CLUB EMBLEMS: A bronze car emblem may be available if demand is sufficient. All those who would want one or more such emblems as a badge for their car or paperweight should write promptly to Miles S. Amick, Cumberland, Maryland. Enclose a check for $2.50 as a deposit. Before taking any steps, Mr. Amick must know the total number to be ordered, so orders should be sent to him immediately if he is to get the job done. The final cost will be kept below $5.00, and, if the emblems are made, they will be mailed with the balance C.O.D. Should the demand be insufficient to justify the manufacture of these emblems, Miles will return the deposits by November. It's all up to you - if you want a really fine Franklin Club emblem for your car, probably made of bronze, send your order NOW to - Miles S. Amick, Cumberland, Maryland.

A ROSTER of all known Franklin and other early air-cooled cars will be prepared, printed, and mailed by our President, Dick Keys. This is or will be at some time important to all of us in contacting others with similar cars for information or parts. Send Dick a post card describing your cars, giving YEAR, MODEL No., BODY TYPE, CONDITION (restored, good original, unrestored, or for parts only), and, if convenient, include the engine & serial numbers. Dick will issue the roster early this summer and earnestly pleads that you ACT NOW! Write R. V. Keys, 10612 Homage, Whittier, California.

SHOW YOUR FAVORITE CAR in the next issue of "Air-Cooled News" by contributing the cost of a photo-engraving plate and printing. This figures out to $6.25 for a quarter page, $12.50 for a half page, or $25.00 for a full page such as the one sponsored by Charles M. Daniel for our back cover with this issue.

THE STORY OF A FRANKLIN "8" WHICH DID NOT REACH PRODUCTION

Shortly after the Series 145 car entered production, serious consideration was given to an eight-cylinder engine. Cadillac had its V-8, and Packard its in-line "8", so Franklin began a study of V-8 as well as in-line "8" engines.

The V-8 was eliminated as it was evident, based on the V-12 development experience, that such an engine would be unduly complicated and costly. Furthermore, the manufacturing equipment did not lend itself to low cost V-8 machining operations.

It was concluded that if the cylinders and crankcase could be cast integral, it would be possible to use a single camshaft and materially simplify the design. So an experimental 6-cylinder engine with a single cast iron block was built. This engine proved the practicability of the block type but, more important, demonstrated that a general reduction in engine noise and increased smoothness would result.

The next move was to design a straight "8" engine of 275 cubic inches with no increase in length over the Series 14, 6-cylinder engine. This new design incorporated a bore of 3-1/32 and a stroke of 4-3/4, giving a calculated output of 110 h.p.

The decrease in new car sales and a corresponding reduction in engineering budget necessitated shelving this project. It did, however, make a great impression on Messrs. Franklin, Murphy, Williams, Marks and the Research Engineer, Carl Doman. Many times Ed Marks and I would say "If we only had the funds, we would develop an engine which would be as far ahead of the Series 145 as it was ahead of the Series 135." But economic conditions blocked such a move as far as the H. H. Franklin Company was concerned. However, in 1933 when Ed Marks and I, with the backing of James Walker, formed Doman & Marks, Automotive Engineers, an active development program on such an engine was begun. But first a few words about the formation of Doman & Marks will be of interest.

The sale of Franklin engines to the United States government for use in army tanks and combat vehicles, plus the interest of the Japanese government in the air-cooled power plant, prompted Ed Marks and I to consider leaving the Franklin Company (since no funds for development were available) and starting our own air-cooled engine business. Ed Marks mentioned our ideas to James H. Walker of Amesbury, Massachusetts, President of Walker Body Company, builders of bodies for Franklin. Mr. Walker became so interested that he agreed to finance the development and manufacture of a line of heavy duty air-cooled engines. I resigned from the H. H. Franklin Company February 1, 1933, and Ed Marks, while he resigned at the same time, agreed to remain until April 1, 1933.

Doman & Marks began operation on February 1, 1933, in the beautifully equipped plant owned by J. M. Wall Machine Company in Syracuse, New York. Fortunately, many of the Franklin engineers and draftsmen were available

so an outstanding job was accomplished. On June 15, just 5½ months after the beginning, the first "Domark" air-cooled engine was operating. This engine, a 6-cylinder 377 cubic inch power plant, incorporated 4" bore, 5" stroke, hydraulic valve lifters and a structure which would operate in a truck for upwards of 100,000 miles without trouble.

Mr. Walker still carried the same enthusiasm as did Ed Marks and I for the air-cooled passenger car, so he approved the development program for a straight "8", 135 h.p. Model 8B-322 engine. This engine design was begun in May 1933 and incorporated a cast iron block, cast integral with the crankcase. Cylinder heads were cast in pairs and were easily removable for carbon or valve jobs. Peculiarly, the valve arrangement was of the "F" head design. The large intake valve was located in the block and the exhaust valve in the head. This feature was designed to give high volumetric efficiency with very efficient exhaust valve cooling.

The first engine was completed in December 1933. It was dynamometer tested for several weeks, then installed in an assembled car. But first a word about the dynamometer testing. It was typical of any new radical power plant. There were troubles requiring redesigning of cylinder heads, but with its 3-3/8 bore, 4½ stroke and 322 cubic inches, it was able to operate satisfactorily with 6.5 compression ratio and developed, as engines are rated today, 135 h.p.

The performance in the car was outstanding. Gasoline economy was exceptionally good; it was quiet; it was smooth; it was fast; its acceleration was marvelous. However, it burned an excessive amount of oil. This was first attributed to the piston rings, then to the exhaust valve mechanism, but was finally traced to the splash off the crankshaft being sucked up the intake guide and into the combustion chamber. Baffles helped the problem, but it was decided that a major pattern change would be necessary to completely lick the problem. So events prompted us to design a smaller engine for The Franklin Motor Company, the group who had purchased the assets of H. H. Franklin Manufacturing Company.

John Williams, former Vice President of sales of the H. H. Franklin Company, who was heading the Franklin Motors group, became so enthusiastic over the performance of the 8B-322 engine that he prompted us to design the same engine known as the 8F-285. This engine incorporated again the integral cast iron block and crankcase but used regular "I" arrangement of the valves; that is, both valves in the heads. This change was made over the design of the 8B-322 to cut manufacturing costs and to eliminate any possibility of excessive oil consumption.

This engine, the 8F-285, was designed for 3¼ bore and 4¼ stroke and 6.6 compression ratio. The very rigid crankshaft was supported in 5 large steel back bearings with plenty of capacity to permit continuous increase in output as better fuels became available. The Packard "120" was reaching great popularity in 1934-1935, so Mr. Williams concluded that the new Franklin should have at least 120 h.p. to perform better than Packard. So the 8F-285 was rated at 120 h.p. at 3800 r.p.m. Much could be written on the design of this engine but time will not permit much more for the moment other than to say that its production costs would have been extremely

low. In fact, this engine at a production rate of 100 per day could have been produced in 1935 at $105 for labor and material, including cooling system, starter, generator, ignition, carburetor, and fuel pump. At last an engine was available which could be produced for a little less than a comparable water-cooled engine, but again economic conditions interfered.

Just a few words about the car which was designed by Doman & Marks for the new Franklin Picture. It was evident that to compete with the Packard "120", the parts specialists' help would be an absolute necessity. So the engineers from all the principal suppliers were called in and, as a result, the following components were selected:

1.	Engine	Doman & Marks 8F-285 - to be manufactured by Franklin
2.	Rear Axle	Spicer
3.	Front Axle	Spicer
4.	Transmission	Warner
5.	Drive Line	Spicer
6.	Brakes	Lockheed
7.	Generator	Auto-Lite
8.	Starter	Auto-Lite
9.	Ignition	Auto-Lite
10.	Carburetor	Bendix
11.	Fuel Pump	A. C.
12.	Springs	Eaton
13.	Frame	Parrish
14.	Steering Gear	Gemmer
15.	Wheels	Hayes
16.	Body Stampings	Hayes
17.	Instrument Board	Stewart Warner

Unfortunately no drawings are available showing the beautiful lines of this 6 passenger, 3400 lb. car. Only memory remains. We can say that it was most modern and attractive, low hung, and powered by a quiet, smooth, active, air-cooled engine. Production cost figures showed that the car could have been sold for $1070 F.O.B. Syracuse in 1935. We are confident that if it could have entered production it would have sparted the newly organized Franklin Motors to such public acceptance that the name "Franklin" would be on everyone's lips in 1953. However, the lack of capital prevented the continuation of the efforts of Franklin Motors so it remained for Doman & Marks to carry on.

Later the trade name "Franklin", patents, and good will were purchased from Franklin Motors. The corporate name of Doman-Marks Engine Company was the changed to Aircooled Motors Corporation and the product "Domark" changed to "Franklin". Today "Franklin Aircooled Engines" are powering airplanes, and Sikorsky, Hiller, and Bell Helicopters, thus proving that a correct principle, direct air-cooling, can not and will not pass from the automotive picture.

Carl T. Doman

Carl T. Doman

February 11, 1953

THE SERIES NINE

by Clifford Boram

The Series Nine Franklin presented itself to the world in July, 1916, and was very well received. Its engine was the familiar six-cylinder vertical-fin power plant that Franklin had introduced in 1910. This had been a very successful engine and had been undergoing constant minor improvements for the seven years before the Series Nine was brought out. The engine's peculiar characteristics were the hollow, oil conducting crankshaft, the starter-generator unit, the rear-mounted fan, and the usual overhead valves. The engine had earned a reputation for dependability, and this helped make the Series Nine an immediate success.

The body of the Series Nine was developed along the general lines of the Series Eight's, but the modern airstream trend was very obvious. The Renault type hood of the Eight had been completely de-cornered and streamlined, giving the most exquisite front end appearance in current motor car design. Where the Series Eight's fire wall had extended beyond the sides of the hood, the cowl now blended smoothly into the hood lines. Another stand-out feature was the sharply pointed, inclined Vee windshield which was introduced on the brougham and sedan. These three changes were enough to transform a rather slow-looking body into the most dashing of the period.

Unfortunately, while the designers decreased wind resistance, the engineers also decreased the horsepower. The new Series Nine had to be content with a 25.3 h.p. engine, while its father was marching about with 30. This did not mean that Series Nine was a sloth on the road, for its light weight and quick steering gave it a moderately spry performance in traffic. But it wasn't fair to the car to cruise at anything over 40 mph, though some owners would push 50.

The fuel economy of the Series Nine was one of the major selling points, and was unquestionably better than that of the vast majority of its contemporaries. The Los Angeles-Yosemite Valley economy run, held on May 30, 1919, found Franklin the winner, hands down. The Franklin, with Stanley Turner at the controls, won three cups - all that any one car was allowed.- and finished with a record 49.9 ton-miles per gallon. The nearest competitor scored only 41.2 tmpg. On another occasion a New Jersey owner went 49.6 miles on a measured gallon; and that was with three official observers as passengers. My own Series Nine, a 1922, consistently gives over 30 mpg.

The Series Nine was produced in two models, the 9-A and the 9-B. The 9-A was manufactured until early 1918, at which point the 9-B was introduced. Production of the 9-B continued until about June of 1922. In February, 1921, the streamlined hood was discontinued, in the interest of conforming more closely with the current trend of auto design. The new hood, more expensive to produce than the former one, came dangerously close to resembling that of a water-cooled car. There was now an orthodox grille and a simulated radiator shell. This same hood was used on the Series 10.

The Series Nine closed cars were luxuriously and tastefully appointed. The interior fittings were embellished with the classic acan-

thus leaf design. By 1918 it became evident that the designers had gone on an appointment spree: the 9-B sedan for that year carried as standard equipment combination coat-rail pull-to handles on doors, hat and parcel rack, coat hooks, dome and corner reading lamps in Tiffany glass, robe cords and grab handles, umbrella holder, silk shades and draped curtains, ladies' companion and men's smoking set in mahogany, bouquet holder, mahogany tray with ash receivers, cigar lighter, clothes brush, mirror, note book, and pin cushion. 1922, however, found all but four of these conveniences discontinued.

Starting the engine in cold weather posed a problem that the Franklin engineers had been striving to overcome for a long time. On the Series Nine they included every latest development in the previously used starting aids. There was a valve in the exhaust yoke which could be adjusted to deflect the hot exhaust into a jacket around the cold suction yoke, thereby warming the incoming gasoline vapor. In 1917 came another improvement which aided in raising the temperature of the vapor: an electric coil on the side of the carburetor. This was operated by the air control lever on the dash. When the lever was at full choke a little needle valve in the carburetor was opened and the gasoline was directed through the small electric coil. The same positioning of the air control lever turned a switch that allowed electricity to pass through the coil, which at once became red hot. Quoting from an advertising folder: "The electric vaporizer gets an ignitable mixture in the cylinders on the first few turns" of the starter. The vapor was then "Exploded readily by the lightest spark." The air control lever also operated a rotary disc valve on the carburetor which would admit either air heated in a jacket around the exhaust yoke, or air which was at atmospheric temperature, but which had been passed through a cloth air filter inside the passenger compartment. In addition, the early Series Nines had master vibrator which could be used to produce a hotter-than-normal spark. Thanks to these aids, the Series Nine was "able to start readily, even at twenty below zero."

Some owners still had starting trouble in cold weather, and in some communities where cold weather was frequent even the Series Nine gained a bad reputation. The Franklin required a heavier oil than water-cooled cars, because of its higher running tenperature. This made the engine harder to turn over in cold weather. It is also true that a battery puts out less energy at low temperatures than at normal ones, and that is one reason why Franklin used a twelve volt system. Unless the battery was not fully charged, the failure was apparently, not to be explained in this way. Humidity is usually low on cold days, so it is unlikely that wet electrical connections caused trouble. The three requirements for starting an engine - (warm) gasoline vapor, electrical connections, and cranking - seem to have been accounted for.

Why, then, did the engines give starting trouble? Only two reasons are apparent. Perhaps the spark gaps, which were set for high temperature operation, had been so increased by the shrinkage of the cold metal that a fat spark was infrequent. This is likely, for even at full charge, a battery which is cranking a stiff engine has little juice left for the spark plugs. Wide gaps and little electricity do not make for quick starting. The solution of this problem is not very expensive: spark plugs made of metal with

low coefficient of expansion, such as the invar alloy used in later Franklin models, and the use of two batteries - one for starting and one for sparking. Spark plug shrinkage, while admittedly not all huge, would be a factor, no matter what the amount.

The other possible explanation for starting trouble would be that the Franklin repair garage in the community was not giving the owners proper service. That such was occasionally true is proved by the following testimony. Mr. J. E. Korb, who had charge of the repair shop at the Franklin factory until 1922, and who is now Director of Sales at the Franklin Automobile Service Co., of Auburn, Ind., writes that the repair shop, among other things, took care of "owners who could not get satisfaction from the dealers." And the fact that some cold-weather communities found the Franklin best in winter, while other localities did not, seems to point to bad servicing in the affected communities. In more than a few places this may have been the case, especially if these garages were passing out spark plugs with a high expansion coefficient. Both Benton Mica plugs and a type of Champion, expecially made for the Franklin engine, were standard equipment on the Series Nine. Presumably these were made of low-shrinkage metal, although on examination they seem to be of regular steel. If we assume that they were of low shrinkage, however, a dealer who passed out a different variety would be guilty of a malpractice and would have a lot of complaints on his hands. Bad dealers and insufficient electrical operation in cold weather, then, seem to be the two main causes of starting difficulty. If any one has other opinions, perhaps he could write an article for this magazine.

While the Series Nine went a long way toward indifference to cold, as well as to heat, it did not go quite far enough to please all communities. The engineers had at last perfected the method of getting hot fuel into the cylinders, but they could have done more in the field of electrical service. The reduction to a 6-volt system did not help matters. Had they included non-shrink plugs and the two batteries, the car would have been unsurpassed in winter.

Many Series Nine owners, wishing to add to the already remarkable flexibility of their cars, ordered wire wheels to replace the standard wooden ones. With large size wheels, such as the Series Nine's 24" ones, the use of wire for spokes increases the springing by a surprisingly large factor. All the improvements in springing and shock absorption, about which Detroit boasts so loudly today, have been absolutely necessary to counteract the effect of reducing the wheel size. The body designers seem to be the ones who require this reduction. It is a recognized fact that the smaller the wheel, the larger the bump. The wire wheels used on today's Chrysler, for example, are of no practical value, for the spokes are too short and thick to be flexible. But in the big wheels of the Series Nine, wire spokes were a definite advantage. The principle of the wire wheel is that it relies on suspension, rather than compression: the hub hangs from the top of the wheel, rather than resting by compression on a wooden spoke which is connected, in effect, directly to the ground. In the wooden wheel, the tire is the only flexible part between the hub and the ground. In the wire wheel, the spokes are flexible as well. If you have ever watched the tall wire wheels of an antique as they roll along, you have probably been amazed at the way the hubs seem to stay on the same plane while the tires and rims jump over bumps. The factory would have added appreciably to the excellent

flexibility of its cars if it had made wire wheels standard equipment. Your author's 9-B has wire wheels, and its ride compares favorably with that of many modern cars. This is no exaggeration. It rides so smoothly, in fact, that the float in the vacuum tank occasionally becomes stuck, and I have to look for a large pot hole in the road to jar it loose. I have had the experience of riding in a Series Nine equipped with the original wooden wheels: its ride was noticibly harder than that of the wire wheeled 9-B, although it was still remarkably smooth.

The Series Nine, although it could have been improved, was a very advanced car for its day. It also marked a turning point in Franklin history. Streamlining reached its apogee in this series, and had already started to decline by the time the last Nine was made. The rear-mounted fan and suction cooling died with this series, giving way to the pressure system of the Series 10. Light weight began to decline with the 9-B, when aluminum fenders were replaced with heavier steel ones. In this series the sales of sedans passed those of touring cars. Series Nine saw the introduction of the demi-sedan, the demi-coupe, and the victoria (club) coupe. The great reversal was that during the production of Series Nine the Franklin began to simulate the appearance of water-cooled cars. This reversal, of course, did its share in increasing sales, for most people wanted a car that didn't look radical; but it was an unfortunate change from the collector's standpoint, for it robbed the car of its distinctive style.

59,500 Series Nines were built in the six full years they were produced. This means that the Nine was Franklin's largest series and its period of manufacture was longer than that of any other.

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"As to Why the Franklin Co. Failed"

As to why the Franklin Co. failed - I expect different people would give different answers. The company was entirely solvent when bankruptcy proceedings were instituted. The company did have a large indebtedness. The size of the indebtedness apparently frightened one particular credit manager of a Chicago bank. In any event he got other banks to join him and the company was thrown into bankruptcy, with the result, as is apt to be the case under forced liquidation, the company was wiped out.

H. H. Franklin
October, 1952

FOR SALE: 1929 Franklin Model 135 Sedan, beautifully restored including lacquer finish in gray and black, all new upholstery in gray mohair, garnish mouldings & dashboard covered in Transveener pencil stripe walnut with burl walnut on inlay panels. Electrical system completely rewired, and chrome, tires, and mechanical condition excellent. This car is offered for $450. which is considerably under the restoration cost.

T. H. Hubbard
1405 East Kleindale Rd.
Tucson, Arizona

A FRANKLIN IN ENGLAND - from THE MOTOR

Surprisingly few motorcars cool themselves by air these days, and none that I can think of made in this country. There is the little Crosley (pre-war) in America, the large V8 rear-engined Tatra in Central Europe, and a whole spate of breeze-cooled tiddlers now on the stocks in Italy and France, led by the remarkable Dyna-Panhard. The last-named runs with extraordinary smoothness, as I can say from having ridden in one, and the large-scale mechanism of the Tatra is also pretty unobtrusive, stowed away, as it is, in the boot behind the passengers. But none of the air-cooled cars I have tried, with one exception, has ever really rivalled the best water-cooled jobs for quietness.

The exception came my way the other morning, and, although an elderly design, it earned an A-Plus for orderliness, discipline, and absence of fuss. This machine is an air-cooled Franklin of 1929 (he should have said 1928) vintage, which has been in store for 13 years until got out recently and dusted off.

Viewed from outside there is nothing to indicate that the Model 12B Franklin (I gather that is the car I tried) is any different from other large Americans of the four-square or Capone era of sedans, for the bonnet has a frame and grille like any of its peers. Beneath this coverling lives an engine of light-aircraft aspect; six cylinders in line, with a bearing between each, and spigoted into a light-alloy crankcase; but the barrels are not finned radially, as in motorcycle and aero practice, but encased in steel jackets open top and bottom. Cooling is provided by a "Sirocco" fan driven from the nose of the crank, which sends air at high speed into a pressed-steel duct running along above the heads, with baffles to shoot the "collant" down the jacket of each cylinder. You would expect a mighty rushing wind, wouldn't you, with whistling and hissing to boot? Well, in the Franklin there is no such noise. Not even any clatter from the ten-thou. tappet clearances; all one hears is a gentle sigh from the carburettor when the throttle is opened. The rest is silence, and a powerful argument for air-cooled engines. Just the thing for this year's weather - winter and summer both.

In my recent experience, springing does not work out according to plan. There's the old 1904 Mercedes which C. R. Abbott has restored to pristine glory and one-time Brooklands form. Moderns who saw it as a hulk, when just rediscovered after many seasons fallow, became horrified at the thought of speed in a car with three-quarter-elliptic springs at the front, predicting aggravated instability of the direst kind. Yet the Mercedes handles very well, and you will remember, won the Edwardian race at Gransden at a rousing 46 mph.

That is one example. The Franklin is another. Here is a car with full-elliptic springs all round and a chassis frame made of wood. Yet it does not bounce, it does not roll on corners, and there is not a rattle from the body after 18 years. It's 'agin Nature', I'd have said; surely somebody must be wrong?

KING-PIN
Sept. 1947

The Restoration of My 1910 Franklin Model D. Toy Tonneau Touring Car
By Dick Merrill

This car was first discovered in 1940 by two VMCCA members. It was laying abandoned in the delapidated condition shown in photo on a farm in Concord, N.H. It had been used for years as a milk delivery truck and was completely worn out in every way, so bad that its purchase was not considered. Later the car was sold to Major Goyette of the Peterborough Museum. His men repaired the wooden frame and reinstalled the touring back seat but gave up further restoration because of the poor condition.

In 1948, I saw the car and was intrigued by the possibilities it had to become an interesting and attractive Club car. Since purchasing the Franklin, many, many hours and more money than I care to contemplate have been put in the restoration. The engine was removed and rebuilt. One new timing gear and two main bearings were made, as well as parts being built up by welding and remachining. The valve mechanisms were all rebuilt, new guides, etc. Modern spring loaded grease seals were installed in transmission and rear axle. Several new ball bearings were put in these parts. The foot brake was relined. Front end rebushed, wheels balanced, and a general refurbushing of the entire chassis.

The body being aluminum was in fair shape. The front seat was completely without upholstery. The upholstery from another Franklin front seat was removed and installed. The body was stripped of several coats of paint. The 1910 Franklin catalog states "four passenger toy tonneau, red body, black fenders" sure enough, the innermost paint removed was red. The car was repainted in original colors, the only liberty taken being the cream colored wheels. No top came with it, so new side iron and bows were secured. These were cut and fitted to the shape of the car. The bows had to be made six inches narrower. The top was covered professionally. The paint job is also professional.

The windshield installed was a gift, and required the making of the wooden adapter board and the brass braces running down to the frame. This car won third prize in its class at the VMCCA national Framingham meet this spring. There are many much finer restorations around, but this car has proved to have a real glamour personality and attracts much attention. We feel that it has every desirable old car feature, namely, plenty of brass hardware, the open front seat, the distinctive Franklin barrel hood, spreading cape top, and a bright, but authentic, paint job. the car is really small, and its cruising speed is about 28 mph. We consider it too frail for a Glidden Tour car, but just right for local runs. This year it has taken part in the Framingham, all NSOCC, Essex County run, Peterborough, N. H. and the Anderson meets.

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FOR SALE: 1923 Franklin coupe, completely restored in AA1 shape at a cost of $1200. Will take $600.

Sidney W. Smith
444 Wooster Avenue
Akron 7, Ohio

THE VISION OF FRANKLIN MANAGEMENT TOWARD NEW ENGINE DESIGN

The H. H. Franklin Manufacturing Company was outstanding, not only as a builder of the finest automobile, but also as a developer of young executives. Ralph Murphy was appointed Chief Engineer in his twenties, and E. S. Marks became Chief Engineer soon after he was thirty. I could cite many examples where young, talented men were selected for key positions, without years of experience. Perhaps this explains the originality, the progressiveness, and the leadership of the organization. Certainly when we look at "Franklin Firsts" we can't help but again salute Mr. Franklin for his outstanding management.

To me, E. S. Marks had vision given to very few people. He could look down the road and see what was needed to keep Franklin out front and he charted a course for us to follow at all times. In 1927 it was apparent that a new approach to air-cooled engine design was necessary - new thinking, new ideas, and no established prejudices. So Mr. Marks brought Glen Shoemaker into the organization from McCook Field (now Wright Field). Mr. Shoemaker had had little automotive experience but he had obtained a sound engineering education from the University of Illinois, plus five years' experience operating a garage, topped off with several years in research at McCook Field. Probably the most important asset possessed by Mr. Shoemaker was his very delightful wife who guided and encouraged him to do the unusual.

Mr. Shoemaker remained with the H. H. Franklin Company only one year, yet he started the Engineering Department on the development program of the side draft cooling system applied to a 272 cubic inch, 6-cylinder engine and to a 398 cubic inch, V-12 engine.

It became my good fortune to be made Research Engineer when Mr. Shoemaker left to join the General Motors Research Division in charge of Diesel engine development. The success of the G.M.C. two cycle engines as we know them today are, in the main, the results of Glen Shoemaker's efforts. This again proved Ed Mark's ability to pick outstanding men. Mr. Shoemaker is still with General Motors occupying a very top position.

The intensive development on the new engines began in the fall of 1928 with dynamometer tests continuing along side road tests, under the direction of John L. Burns. On the dynamometer the 6-cylinder engine developed 80 h.p. at 3000 r.p.m. The best we had ever seen from one of the production engines (Series 135) was 60 h.p. - so the entire organization was thrilled - at last Franklin performance surpassed all others in its field.

Development work continued until when this (Series 145) engine entered production in the summer of 1929. It was developing 100 h.p. at 3000 r.p.m. It cooled much better, economy was improved, and certain fundamental defects of the previous designs were absolutely eliminated.

The increased power resulted from several different factors, such as improved breathing through the use of very large intake valves, improved induction system, and improved cooling, but most important a cooling

fan which absorbed only 8 h.p. at 3000 r.p.m. instead of that used on the 1929 model which absorbed 19.75 h.p.

In 1931 (Series 15) the induction system was further improved, the camshaft was redesigned for improved quietness and idling characteristics, but last but not least, the cooling fan was further improved in efficiency. It absorbed only 4.2 h.p. at 3000 r.p.m. and delivered 7% more air than that used on the 1930 Series 145 model. In fact, the fan used on the 1931 model absorbed approximately 50% of the power required to drive the fan used on the 1931 Packard "8" water-cooled engine.

The 1932 Series 16 engine was further improved in detail. However, the incorporation of air pressure to the carburetor from the cooling fan increased the output by approximately 7%. This increase came principally from cooler air to the carburetor and a very slight boost (approximately 3" H_2O) from the air pressure.

Beginning with the 1930 6-cylinder Model 145, Franklin stepped out well ahead of competition. This engine, having $3\frac{1}{2}$" bore, 4-3/4" stroke, with 5.3 compression ratio, developed more power per cubic inch piston displacement than any engine built in the United States with the exception of the Duesenberg, and that engine might be classed as special.

"Cannon Ball" Baker, using one of these engines, broke the speed records of all types. He proved to the public the economy of operation. In short, no longer was Franklin called "the old man's car" - it now excelled in every field.

Just a few more remarks before discussing the V-12 engine. In 1930, one of the Series 145 engines was driven by "Cannon Ball" Baker all over the United States with a compression ratio of 9 to 1 using regular filling station gasoline. Today, in 1953, a few cars are timidly introducing compression ratios of 8 to 1. Franklin accomplished this in 1930 by scientific control of cooling, knowing the operating temperatures of all areas of the combustion chamber and with a unique design of camshaft and induction systems. Yes, Franklin was out front twenty three years ago.

The V-12 Franklin incorporated a design where the angle between the cylinder banks was 60°. The cylinders followed the same basic design of the Series 14-15-16 discussed above, except where smaller, that is, $3\frac{1}{4}$" b bore and 4" stroke. The displacement of 398 cubic inches was large; however, power trends, even in the 1928-1930 era, were upward with predictions of 200 h.p. in 1932. No doubt if the depression of the early thirties had disappeared, Ed Marks' projections of power would have been realized.

The development of the V-12 engine was most interesting but at times perplexing. Cooling was an involved problem. Directing the cooling to twelve cylinders in such proportions that all operating temperatures were <u>even</u> required elaborate systems of measurements. In one test 144 thermocouples in the cylinders alone were used - but when the laboratory work was completed, this engine cooled perfectly. It could be operated at full throttle, 3500 r.p.m., in a room 140°F., continuously without troubles of any kind. Needless to say, the operation was by remote control, as no human could stand the temperature which this remarkable engine could stand.

Plans were all made to ultimately increase the bore of this engine to 3½" and the stroke to 4-3/4", giving 544 cubic inches, with a projected output of 300 h.p. This, of course, assumed constant development of fuels and increased compression ratios.

The V-12 engine entered production in 1932, nearly 5 years after the initial design was started. To my mind, it was absolutely free of the so-called "bugs" since in four years of active development, including road testing all over this country, troubles were "licked" one by one.

The fact that less than three hundred of these V-12 cars were built should not be charged to the design. Economic conditions simply eliminated the market. Otherwise, this car would have received great public acceptance. It was outstanding in appearance, outstanding in performance, but just too costly for depression days.

To my mind, the Franklin Series 14-15-16, 6-cylinder engines, and the Series 17, 12-cylinder engines, were outstanding. They were years ahead in design and incorporated many features which are gradually being introduced in our so-called modern power plants.

I have purposely discussed these two engines in detail as I later plan to trace the design and development of the 8- cylinder Franklin car by Doman & Marks using fundamentals of these two Franklin engines. Unfortunately the Franklin "8" - $1070 - 120" wheel base car never entered production, but its development is an interesting story. (See Page 2)

Carl T. Doman

Carl T. Doman

February 11, 1953

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WANTED: A copy of COAST TO COAST, the story of the 1904 transcontinental run by the Franklin now owned by Mr. Ralph Hamlin. Write Arthur H. Amick, Cumberland, Maryland. Note - Mr. Amick can furnish timing diagrams for 1905,1906,1907, and 1908.

CORRECTION: Mr. Smith Hempstone Oliver, Associate Curator, Smithsonian Institute, writes that the 1st Franklin car, the Averell 1902 runabout, was repurchased by the Franklin Co. in June 1916, not in 1929 as stated on page 8 of Issue #1.

WANTED: Carburetor for 1905, 4 cyl. Franklin. J. E. Vanderveer, 26 Emerson Street, Kingston, N. Y.

Club Stationery available. Write for sample and prices.

WANTED: Renault-type hood bonnet for Series 9. W. W. Norton, 2827 Woolsey Street, Berkeley 5, California.

WANTED: Franklin Speedster, 1930 or later. R. D. Kern, Rt. #1, Box 172, Waukesha, Wisconsin.

SOME MISCELLANEOUS NOTES ON THE FRANKLIN 12

"As to the 12 cylinder car. The engine was originally installed in the stock 6-cylinder chassis. Being light weight and rather simple, it was a beautiful car to drive. But to meet the sales point of view a new and larger chassis was made for the engine. The engine not being too well developed, did not prove a real success."

H. H. Franklin, Sept. 1952

"It could be operated at full throttle, 3500 rpm, in a room 140°F., continuously without troubles of any kind - the operation was by remote control, as no human could stand the temperature which this remarkable engine could stand.

"Plans were all made to ultimately increase the bore of this engine to 3½ and the stroke to 4 3/4, giving 544 cu. in., with a projected output of 300 hp.

"The V-12 engine entered production in 1932, nearly 5 years after the initial design was started. To my mind, it was absolutely free of so-called 'bugs' ---.

"The fact that less than 300 of these V-12 cars were built should not be charged to design. Economic conditions simply eliminated the market. Otherwise, this car would have received great public acceptance. It was outstanding in appearance, outstanding in performance, but just too costly for depression days."

Carl T. Doman
"Air-Cooled News", June 1953

"I have no 12 cylinder car and do not know the whereabouts of any as around here they went to the junk yards at an early age, a beautiful car but a sorry engine."

Frank W. Cross, 8/22/52

(Mr. Cross started as a Franklin mechanic in 1913, was later shop foreman, and then service manager until 1932, when he opened his own shop specializing on Franklins until 1939.)

"We are confident that engine speeds will climb higher and higher, and that engines will become smaller and smaller, and lighter, so that peak rotational speeds of 6,000 to 7,000 rpm will not be unusual. Even in 1932, the 12 cylinder Franklin engine would operate hour after hour at 4,500 rpm with no damage to the engine."

"2000 Pound Rear-Engine Car"
Motor magazine, Oct. 1943

"I personally never thought of the 12 cylinder Franklin as representative of Franklin tradition. The 12 cylinder car that went into production, as a whole, was poorly engineered outside of the Engineering Department. In other words, the banks sent a General Manager in and he scrapped the

12 cylinder car incorporating Franklin features, such as flexible construction, full elliptic springs, light weight, etc., and substituted a heavy automobile made up of assembled units. The 12 cylinder Franklin which was built in production had the engine which Ed Marks and I developed, but the chassis was made up of Spicer front and rear axles, very heavy frame, 144" wheelbase, and weighed approximately 4700 pounds. Neither of us was ever proud of the production 12 cylinder job."

Carl T. Doman, 3/11/53

"I sold the Franklin V-12 before having received your letter. ---It so happens that I am only able to keep a stable of a few sport cars. I liked the car very much and if it had been a touring or roadster, I probably would have always kept it to go along with my sports cars. It is a very well built car, easy to handle, and lots of power. I hope this answers your questions. I don't think Franklin ever did build a bad car."

Ed. Griffin, 3/16/53

"While I have owned a Franklin for several years, I have done nothing to restore it, my time being occupied in the restoration of three Wintons of the vintage 1903, 1904, and 1907. After I have finished the task of restoring these cars, I intend to devote my time to the Franklin which is a 1933 twelve-cylinder Club Brougham, Motor No. X5319, Serial No. 73-1033421. This car belonged to Addison Q. Thacher, the former Mayor of Toledo (Ohio), who tells me that on numerous occasions he drove it at a speed in excess of 130 miles per hour."

Gerald P. Openlander, 12/30/52

"I dropped by the Franklin showroom the other day to inspect more closely a car that has commanded much interest recently. The new Franklin super-charged, air-cooled, V-12 with body by LeBaron, is a beautiful and efficient machine. The styling by LeBaron shows distinct smartness - a long sweep of the fenders and extra wide doors that permit of easy entrance. The bonnet design is impressive in its simplicity, offering an unbroken line to the windshield."

Cameron C. Stineman
Country Life magazine, March 1933

"The extension of the hood panels right back to the windshield and door lines is the solution to an artistic problem that has beset designers for a long time. It achieves a pleasing blending of all the vertical and horizontal surfaces that determine the form of a car. The construction gives sleek, long speed lines which are appropriate to a car of high power and luxurious size.

"An outstanding point of character is the slope to the hood front which is carried also into the windshield and front door line. In combination with the piercing "V" of the hood front, this effect produces the verve and spirit of air flight.

"The interiors present the same high character as do the exteriors. Always recognized for the highest attainment in motor car comfort, Franklin presents in the new 12, interiors which can best be understood by comparing them to the luxury of your own drawing room."

from the Franklin 12 catalog of 1932

"To see the car is to feel instantly the freshness and brilliance that Le Baron has styled into the Franklin Twelve - the year's pattern of beauty and luxury. And when you drive this responsive, amply proportioned car of 144-inch wheelbase, that feeling is immediately transformed into thrilling admiration for the sensational performance which carries you to new luxury in travel."

advertisement in Time magazine, April 1932

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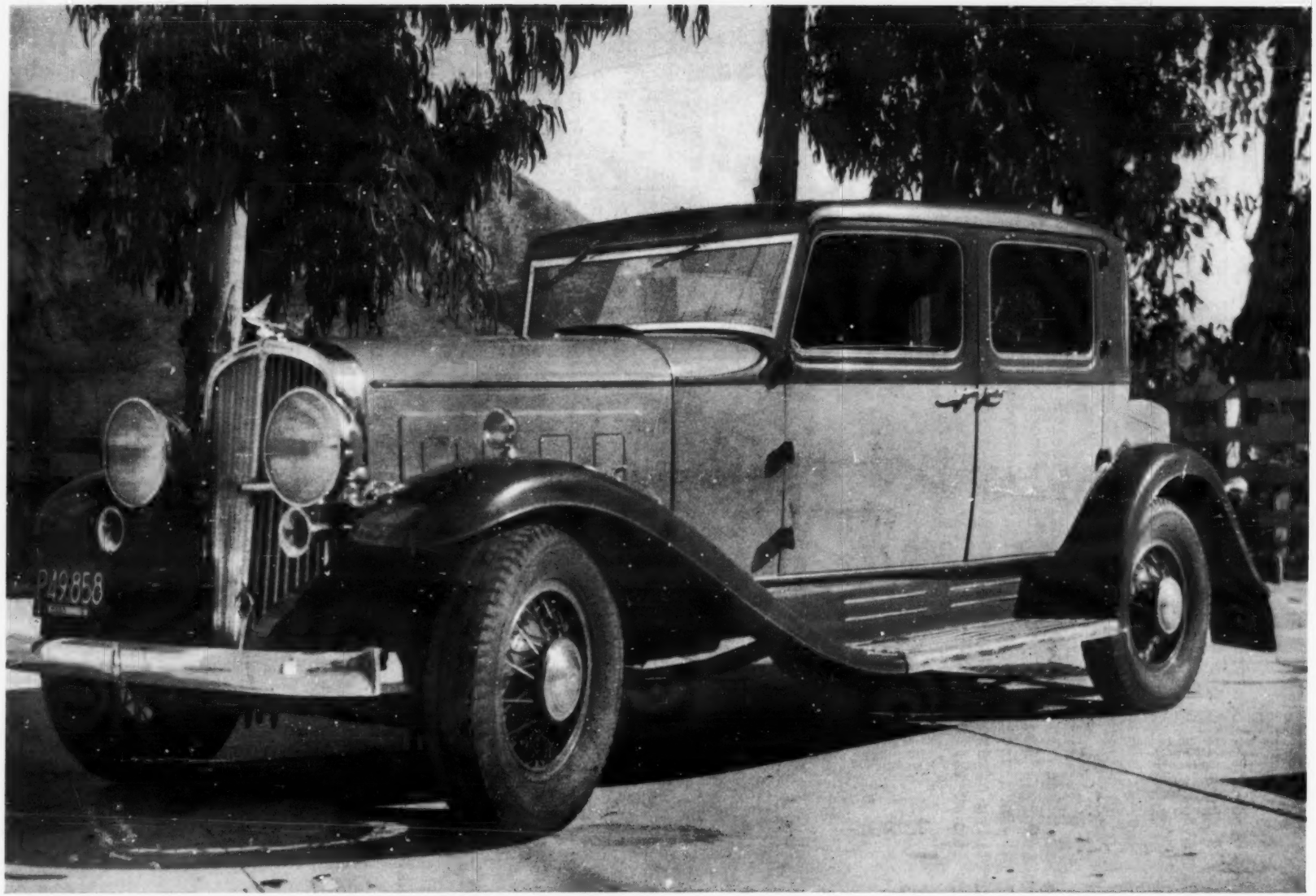
WANTED: Pictures and detailed information on the 1912 and 1913 Franklin roadsters to help in the building of a scale model.

W. Fenton Meredith, 66 Ferncliff Avenue
Youngstown 12, Ohio.

PREVIEWS - Member Henry Austin Clark of the Long Island Automotive Museum is now preparing an article on the famous copper-cooled Chevrolets of the early 1920's, about which he has considerable data. Mr. Carl T. Doman has promised an article on the increasing of Franklin horsepower over the years, and possibly another on the highly successful employment of Franklin engines in U. S. Army tanks during the early 1930's.

BACK COVER: This is a recent photo of the 1932 Club Sedan sold last year by Frank Gardner to Charles M. Daniel, 20951 East Lolita Street, Route 1, Orange, California. Mr. Daniel reports the trip from Boston to Los Angeles was a real pleasure.

No. 61 BULBS: 3 volt for Series 10 dash & tail lights are available through any Westinghouse Sales office or Westinghouse Electric Supply Co.



1932 Airman - Series 16